A CASE OF PRIMARY DUODENAL ADENOCARCINOMA WITH HEPATIC METASTASIS: FIRST REPORT FROM BANGLADESH

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ABSTRACT

The patient was a middle aged, married, businessman having complaints of abdominal pain, weight loss and loss of appetite for short duration. His upper GI endoscopy revealed a growth restricted to duodenal bulb with multiple space occupying lesions (SOL) in liver. Histopathology of tissue obtained at endoscopic biopsy from duodenal growth and cytology of ultrasonography guided fine needle aspirate from hepatic SOL confirmed the diagnosis of primary duodenal adenocarcinoma with secondary metastasis to liver.

Key words: *Duodenum, Adenocarcinoma, Hepatic Metastasis.*

INTRODUCTION

Primary malignancy of the duodenum is unusual. There are few reports of duodenal adenocarcinoma in the literature.[1-3] Primary carcinoma of the duodenum, not involving the ampullary region, is very rare accounting for only 0.3% of all gastrointestinal carcinomas[1]. The most common tumor site in the duodenum is the periampullary region, which is affected in 62.9-81.8% cases.[2] Resection is curative in 43.4-87% of cases and 5-year survival is 29-86% in such cases.[2] On the other hand, unresectable cases have very poor prognosis. 5-year survival is 0% and median survival is only 7 months.[2]

Here we present the case report of a patient with primary duodenal adenocarcinoma with hepatic metastasis for the first time from Bangladesh.

CASE REPORT

The patient a 38 year old businessman, coming from middle class socio-economic background, presented to us with complaints of abdominal pain, weight loss and loss of appetite for 5 months. Pain was colicky in nature radiating to right shoulder and aggravated after meals. He was non-diabetic, normotensive, non-smoker and non-alcoholic.

His investigations showed haemoglobin 12.6 gm/dl, TC of WBC 7800/cmm, neutrophil 67%, lymphocyte 16%, eosinophil 6%, monocyte 7%, platelet count 409 x 10^9/L and ESR 44 mm in 1st hour. His random plasma glucose was 4.17 mmol/L. The patient's liver panel showed serum bilirubin 19 µmol/L, ALT 70 U/L, AST 64 U/L and prothrombin time 12.5 sec (control 12 sec.). HBsAg was negative, AFP 1.07 ngm/ml, CEA 20.8 ngm/ml and CA 19.9 >500 U/ml.

Ultrasonography of whole abdomen showed normal size liver with multiple hypoechoic SOLs of variable sizes, involving both lobes. The finding was compatible with hepatic metastasis. The biggest SOL was in right lobe measuring 3.1 x 2.9 cm. CT scan of upper abdomen was done and features were strongly suggestive of hepatic secondaries. Fine needle aspiration was done from hepatic SOL under ultrasonography guidance and cytology confirmed secondaries to the liver.

Upper GI endoscopy was done and revealed growth in the duodenal bulb (figure 1). Endoscopy repeated at 10 days interval showed significant increase in size of the growth (figure 2). On both occasions gastric antrum and post-bulb area of duodenum were found to be tumor free (figures 1 & 2). Meanwhile biopsy taken from the growth at endoscopy showed anaplastic epithelial cells arranged in glandular pattern. The tumor cells

FIRST ENDOSCOPY SHOWING GROWTH IN BULB WITH UNINVOLVED ANTRUM AND POST-BULBAR AREA

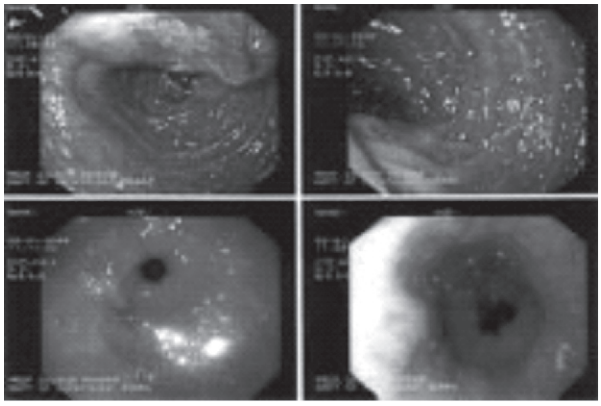

Figure 1

were moderately differentiated invading the surrounding stroma (figure 3). The patient was diagnosed as a case of primary duodenal adenocarcinoma with secondary metastasis to liver.

DISCUSSION

Primary duodenal carcinoma has been reported in the literature. There is report about a 58 year old Japanese gentleman initially diagnosed as a case of gastric cancer. However gastroendoscopy revealed malignancy in the antrum of the stomach and also a tiny, shallow depressed lesion in the third part of the duodenum. Magnifying endoscopy with crystal violet staining showed irregular pit pattern which suggested non-invasive tubular adenocarcinoma. Biopsy revealed papillary adenocarcinoma in the stomach and well-differentiated adenocarcinoma in the duodenum.[3]

A paper from Japan reports a patient with duodenal carcinoma in which the tumour extended across the pyloric ring. Gastric portion of the tumor revealed adenocarcinoma while it's duodenal portion showed neuroendocrine cell carcinoma.[4]

Another group from Japan has reported a case of malignancy in posterior wall of the second part of duodenum detected on duodenoscopy. The patient was a 50 year old Japanese. On further investigation it was found that he had associated hereditary nonpolyposis colorectal cancer (HNPCC). Although extra-colonic malignancies are associated with HNPCC, duodenal cancer is very rare and only two more cases have been reported over the past 20 years.[5]

There are only two reported cases of adenocarcinoma of minor duodenal papilla in the literature.[6,7] Most cases report of benign tumors of minor papilla including carcinoid, somatostatinoma, adenoma, adenomyoma and gangliocytic

SECOND ENDOSCOPY SHOWING SIGNIFICANT INCREASE IN GROWTH SIZE. ANTRUM AND POST-BULBAR AREA ARE STILL UNINVOLVED

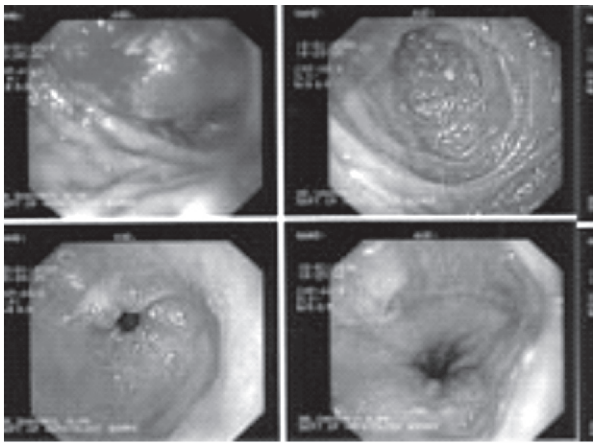

Figure 2

paraganglioma. Adenocarcinoma of the major papilla is relatively common and is classified into two types, namely intestinal and pancreatobiliary types, based on the epithelium of its origin. The former is derived from duodenal mucosa covering the papilla, whereas the later is associated with pancreatobiliary epithelium lining the common channel and duct systems within the papilla. This classification is supported by immunohistochemical staining.

When primary duodenal carcinoma is resectable, pancreato-duodenectomy is the most common operative procedure, since majority of such tumors originate in the periampullary region. There are few reports of aggressive therapy for unresectable cases. Radical surgical resection is thought to provide a favorable prognosis for

HISTOPATHOLOGY SHOWING DUODENAL ADENOCARCINOMA

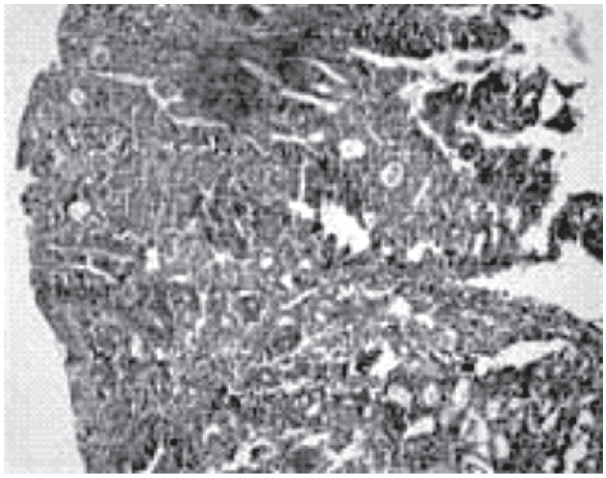

Figure 3

duodenal carcinoma.[8,9]

A report from the Department of Radiation Oncology of Duke University Medical Center, Durham, USA mentions only 32 cases from Duke University Medical Center and affiliated hospitals between 1975-2005. Surgery alone was performed in 16 patients. The other 16 patients received either preoperative or postoperative concurrent chemotherapy and radiation therapy (CT-RT). Median RT dose was 50.4 Gy. All patients treated with RT also received concurrent 5-fluorouracil-based CT. 5 year overall survival, disease free survival and local cure for the entire group were 48%, 47% and 55% respectively. 5 year survival did not differ between patients receiving CT-RT and surgery alone. However in patients undergoing resection, CT-RT appeared to improve overall survival. The study concluded that given the pattern of relapse with surgery alone and favorable outcome in patients undergoing complete resection with CT-RT, the use of CT-RT in selected patients may be recommended.[10]

There is one case report of remission of primary duodenal adenocarcinoma with liver metastases with S-1 chemotherapy.[11] The patient survived 1.7 years. S-1 is an oral anticancer drug, composed of tegafur, gimestat and otastat potassium at a molar ratio of 1:0.4:1.[12] It is based on the biochemical modulation of 5-fluorouracil and reported to be effective in patients with advanced gastrocolorectal cancer.[13]

Survival of a patient with primary adenocarcinoma of the duodenal bulb with multiple liver metastases for 3.4 years has also been reported from Japan.[14] The patient received UFTM regimen that consists of UFT, a combination of 600 mg tegafur (400 mg/m^2) and 1344 mg/day uracil for oral use, plus 8 mg mitomycin (5.3 mg/m^2).

There is another reported case of a primary adenocarcinoma of the fourth part of the duodenum with multiple hepatic metastases, in which 3 year survival was associated with 5-fluorouracil chemotherapy.[15]

CONCLUSION

Since primary duodenal adenocarcinoma is not only very rare, but also unresectable in most cases, no firm chemotherapeutic regimen has been established. However it is worth mentioning that in all reported cases, duodenal cancer patients who responded to chemotherapy were treated with protocols using 5-fluorouracil or its modulators. Therefore 5-fluorouracil may be an adoptable therapeutic modality for treatment of unresectable primary adenocarcinoma of the duodenum.

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